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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/857,610	06/08/2001	Hiroyuki Koshino	0051-0155P	6442

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EXAMINER

MORAN, MARJORIE A

ART UNIT PAPER NUMBER

1631

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/857,610	Applicant(s) KOSHINO ET AL.	
	Examiner Marjorie A. Moran	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,8-11,13-16 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,8-11,13-16 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/7/05</u> | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/12/04 has been entered. Claims 1-5, 8-11, 13-16, 18-20 are pending.

This office action is a response to the Request for Status filed 7/25/06. Applicant's response filed 4/7/05 had been misclassified, thus the application was in an incorrect status. The examiner apologizes for the delay in prosecution and inconvenience to applicants.

All rejections and objections not reiterated below are hereby withdrawn in view of the amendment filed 10/12/04.

Information Disclosure Statement

The IDS filed 4/7/05 has been considered in full.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-5, 8-11, 13-16, 18-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a NEW MATTER rejection.

Storing codes in a memory of a computer, as recited in each of amended claims 1-3, 13, and 18 is new matter.

Recording NMR shifts or configuration codes on computer readable recording media, as recited in amended claims 15 and 16, is also new matter. This rejection is reiterated from the pervious office action. Applicant has neither amended the claims nor provided support, by page and line number or Figure element, for the new limitations, therefore the rejection of claims 15 and 16 is maintained for the reasons previously set forth.

Comparing conformation codes of a molecule with "stored conformation codes" of other molecules, as recited in amended claims 1, 13, and 18, and comparing conformation codes of an organic/sugar molecule with "stored conformation codes" of at least one other molecule, as recited in new claims 19 and 20, is also new matter.

A computer comprising a program for running a method as set forth in amended claim 18 is new matter.

A method of linearly coding organic molecules other than sugar molecules, as recited in new claim 19, is new matter.

With regard to storing of codes in a computer memory and comparing codes to “stored” codes, the original claims did not recite any limitations with regard to either comparison of codes or storing codes. The originally filed specification teaches that codes may be expressed; e.g. on page 18; however, “expression” is generally not equated with “saving in a computer memory,” but is more commonly interpreted as “displaying.” Original Figures 23-29 show comparison of a variety of codes, but neither the Figures themselves nor the originally filed specification indicate whether the codes are/were stored in a computer memory. It is noted that codes may be printed out in order for comparison to take place (e.g. comparison “by hand” or “by eye”); merely because the steps of calculating codes are computer-implemented does not mean that the codes are necessarily saved in a computer memory nor that a step or “saving” is inherent to the method. Similarly, codes need not have been “stored” in order to be compared; the codes for two molecules may be calculated simultaneously and compared without any “storage” of information in the interim. Applicant does not point to support for steps of storing and comparing to stored codes in the originally filed disclosure, and none is apparent, as set forth above, therefore the claims recite new matter and are rejected.

With regard to a computer comprising a program, the original claims recited only a compute readable medium comprising a program. The originally filed specification discloses a computer readable medium on page 6 comprising a program which can be executed by a computer. The disclosure that a program CAN BE executed by a computer is not a disclosure for a computer which actually comprises a specific

program. The originally filed specification does not specifically disclose a computer comprising a program for coding molecules. Applicant does not point to support for a computer in the response filed 10/12/04 and none is apparent, as set forth above, therefore claim 18 recites new matter and is rejected.

With regard to coding organic molecules, the originally filed specification and Figures exemplify coding and comparing numerous sugar molecules, but do not disclose or exemplify coding and/or comparing any other type of organic molecule. The original claims did not limit the molecules to be coded, thus the originally filed disclosure fails to provide support for the full scope of claim 19. In the response filed 10/12/04, applicant states only that coding and comparing sugar molecules is disclosed and exemplified, but does not point to specific support for coding and comparing any other type of organic molecule. For these reason, claim 19 recites new matter and is rejected.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-5, 8-11, 13-16, 18-20 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 13 and 18 recite that a hierarchy is made "based on" all atoms of a molecule. It is unclear whether applicant intends the hierarchy to comprise all atoms of the molecule, or to comprise a subset which is somehow "based on" all atoms of the

molecules. As the limitation intended by the phrase "based on" is unclear, the claims are indefinite.

Claims 1, 13 and 18 recite forming a molecular tree by placing "said atoms, which belong to a hierarchical level" in an order. The antecedent basis for "said atoms" is unclear as a variety of atoms is recited earlier in the claim; i.e. "all atoms which are directly bonded to a start atom," "all atoms, except said start atom," and "all atoms of said molecule." In addition, the phrasing and use of a comma render it unclear WHAT is to be placed in an order; i.e. "said atoms" or only those which belong to a hierarchical level. As the intended limitation is unclear, the claims are indefinite.

Claims 1, 13 and 18 recite, as part of a step of forming a molecular tree, that a lower hierarchical level to a higher hierarchical level "is expressed in a bonding relationship between a plurality of atoms of a molecule," which is nonsensical. The atoms were previously assigned to hierarchical levels, therefore it is unclear what is intended by limiting the levels to be expressed as a "bonding relationship" between the atoms themselves.

With regard to the entire step of forming a molecular tree; if applicant intends that all atoms which belong to a single hierarchical level are to be ordered such that the level comprising a start atom is the lowest level, and wherein bonds between atoms are indicated in terms of relationships between hierarchical levels, then such limitations should be clearly recited in the claims. It is noted that the examiner has NOT provided suggested language, but is attempting an interpretation of the claim which "makes sense" to her in light of the instant specification. Applicant is reminded that all

amendments to the claims must be fully supported and enabled by the originally filed disclosure.

Claims 1, 13 and 18 recite, in a step of deriving dihedral angles, the phrase "with respect to a group comprising four atoms..." It is unclear what is intended to occur "with respect to" the four atoms recited; i.e. forming a (first) dihedral angle, forming another (second?) dihedral angle, or some other calculation, therefore the claims are indefinite.

Claims 1, 13 and 18 recite, in a step beginning "similarly, assigning angular symbols," the phrase "other atoms to be coded." It is unclear what the "other atoms to be coded" are intended to be; i.e. other atoms in the molecular tree, atoms in another molecule, etc. As the limitation is unclear, the claims are indefinite.

Claims 1, 13 and 18 limit a linear notation to one "coded by a set of angular symbols." It is unclear whether the linear notation is intended to be a set of angular symbols or is intended to be some other linear notation correlating to the angular symbols. It is noted that the latter limitation does not appear to be supported by the originally filed disclosure and therefore may be new matter; however, as the intended limitation is unclear, the phrase is rejected herein only for being indefinite. If such is consistent with applicant's intent, this rejection may be overcome by replacing "coded by a set of" with --comprising--.

Claims 1, 13 and 18 recite steps of "preparing a conformation code"... and "preparing conformation codes..." which steps are not related to any previous step of the claim. It is unclear whether other steps are required to prepare conformation codes or whether all the steps leading up to and including expressing a molecular tree in a

linear notation ARE steps of preparing a conformation code. As the relationship between steps is unclear, the claims are indefinite.

Claim 2 recites that an atom "which has precedence...is positioned at an angular position." It is unclear what is intended by an atom "which has precedence" as no parameters for such "precedence" are recited in the claims.

Claim 2 further recites assigning an angular symbol in accordance with an angular position "after rotation with respect to" a reference position. With regard to all "rotation" limitations, it is noted that all atoms are necessarily "positioned" at SOME angular position with respect to a reference, therefore it is unclear what step/limitation is intended by rotating atoms such that any single atom "is positioned at an angular position with respect to" a reference position. In effect, no "rotation" is required as all atoms are inherently at an angular position "with respect to" a reference position, whether rotated or not. As the limitation(s) intended are unclear, claim 2 is indefinite.

Claim 2 recites carrying out linear notation "in correspondence" with the molecular tree of claim 1. The relationship intended by a "correspondence" with a molecular tree is unclear, therefore claim 2 is indefinite.

Claim 2 recites carrying out "the linear notation." As a step of expressing a molecular tree in linear notation is recited in claim 1, there is antecedent basis for this phrase; however, it is unclear if the step of "carrying out the linear notation" is intended to be the same step as that of claim 1 or a different step of assigning or calculating a linear notation, therefore the claim is indefinite.

Claim 2 recites a step of “preparing a configuration code” which does not have any recited relationship with any previous claim step. It is unclear if the previous steps of claim 2 ARE steps of preparing a configuration code, as would be indicated by the phrase “thereby” before “preparing,” of whether additional steps of preparing the code are intended. If the latter, then it is further unclear what additional steps are intended. Claim 2 recites carrying out linear notation “in correspondence” with the molecular tree of claim 1. The relationship intended by a “correspondence” with a molecular tree is unclear, therefore claim 2 is indefinite.

Claim 3 recites carrying out linear notation “in correspondence” with “said molecular tree” (presumably the molecular tree of parent claim 1). The relationship intended by a “correspondence” with a molecular tree is unclear, therefore claim 3 is indefinite.

Claim 3 recites carrying out “the linear notation.” As a step of expressing a molecular tree in linear notation is recited in both of parent claims 1 and 2, the antecedent basis for this phrase is unclear. Specifically, it is unclear if the step of “carrying out the linear notation” is intended to be the same step as that of claim 1 or of claim 2, or is intended to be a different step of assigning or calculating a linear notation, therefore claim 3 is indefinite.

Claim 3 recites a step of “preparing a planar structure code” which does not have any recited relationship with any previous claim step. It is unclear step of carrying out a linear notation IS the step of preparing a planar structure code, or whether additional

steps of preparing the code are intended. If the latter, then it is further unclear what additional steps are intended.

Claim 3 recites a step of preparing a planar structure code "with respect to the start atom." It is unclear what relationship between a code and a start atom is intended, therefore claim 3 is indefinite.

Claim 4 recites that codes are expressed "beginning with respect to said start atoms" which is nonsensical. As the limitation intended is unclear, claim 4 is indefinite.

Claim 5 limits a linear notation to be carried out "so as to correspond" to a molecular tree. It is unclear what relationship between the molecular tree and linear notation is intended by limiting them to "correspond," therefore claim 5 is indefinite.

Claim 5 recites the phrase "to prepare said configuration codes for said start atom." It is unclear if this is merely an intended result or is intended to be a method step. Further, parent claim 2 recites that the configuration code is indicative of the configuration of a molecule, not a start atom, therefore it is unclear what is intended by a "configuration code for said start atom."

Claim 9 recites replacing atoms with symbols "to be masked." It is unclear if this is intended to be a limitation of the symbols; i.e. those capable of being "masked," or is intended to be a method step, therefore claim 9 is indefinite.

Claim 11 recites "the hierarchical levels of which..." It is unclear "which" hierarchical levels are intended, therefore claim 11 is indefinite.

Conclusion

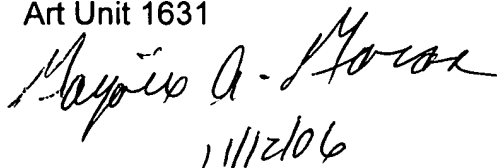
No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marjorie A. Moran whose telephone number is (571) 272-0720. The examiner can normally be reached on Monday-Friday; 6 am-2:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571)272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marjorie A. Moran
Primary Examiner
Art Unit 1631



11/12/06